

Claims:

What is claimed is:

- 1 1. A client-server based file transfer method for a client computer system comprising the steps  
2 of:  
  
3 keeping at the client computer system, at least a portion of a file system associated file  
4 ready for being accessed by an application program while the contents of said file is being  
5 transferred between said server and said client, and  
  
6 fulfilling application program-initiated requests for accessing specified portions of said file  
7 while said file is being transferred.
- 1 2. The method according to claim 1 further comprising,  
2 communicating with said file system by a Future File System Extension program, via a  
3 protocol directed to file accesses to said file system.
- 1 3. The method according to claim 2 in which said protocol is XD SM or derivable from  
2 XD SM, or functionally equivalent to XD SM.
- 1 4. The method according to claim 2 in which said Future File System Extension program is  
2 implemented as a stacked file system.
- 1 5. The method according to claim 2 in which said Future File System Extension program is  
2 implemented in the file system itself.
- 1 6. The method according to claim 1 further comprising,  
2 rendering data on the client computer system.

- 1 7. The method according to claim 1 further comprising,  
2 directly transferring data between a server and an end-user client.
- 1 8. The method according to claim 7 further comprising,  
2 transferring new media data by streaming the data from the server.
- 1 9. A client-server based file transfer method comprising the steps of:  
2 issuing specifications by said client-server, and  
3 streaming client-requested file information to a client computer system in portions  
4 according to the specifications issued by said client-server.
- 1 10. The method according claim 9 in which said step of streaming is performed by sequentially  
2 streaming the requested file, skipping portions of the file previously streamed.
- 1 11. A client-server based file transfer apparatus for a client computer system comprising:  
2 means for keeping at the client computer system, at least a portion of a file system  
3 associated file ready for being accessed by an application program while the contents of  
4 said file is being transferred between said server and said client, and  
5 means for fulfilling application program-initiated requests for accessing specified portions  
6 of said file while said file is being transferred.
- 1 12. The apparatus according to claim 11 further comprising,  
2 means for communicating with said file system by a Future File System Extension program,  
3 via a protocol directed to file accesses to said file system.

- 1 13. The apparatus according to claim 12 in which said protocol is XDSTM or derivable from  
2 XDSTM, or functionally equivalent to XDSTM.
- 1 14. The apparatus according to claim 12 in which said Future File System Extension program  
2 is implemented as a stacked file system.
- 1 15. The apparatus according to claim 12 in which said Future File System Extension program  
2 is implemented in the file system itself.
- 1 16. The apparatus according to claim 11 further comprising,  
2 means for rendering data on the client computer system.
- 1 17. The apparatus according to claim 11 further comprising,  
2 means for directly transferring data between a server and an end-user client.
- 1 18. The apparatus to claim 17 further comprising,  
2 means for transferring new media data by streaming the data from the server.
- 1 19. A client-server based file transfer apparatus comprising:  
2 means for issuing specifications by said client-server, and  
3 means for streaming client-requested file information to a client computer system in  
4 portions according to the specifications issued by said client-server.
- 1 20. The apparatus according claim 19 in which said means for streaming includes means for  
2 sequentially streaming, skipping portions of the requested file previously streamed.

- 1 21. A computer program product comprising a computer useable medium having computer  
2 readable program code means therein for use with a client-server based file transfer  
3 apparatus for a client computer system comprising:
- 4 computer readable program code means keeping at the client computer system, at least a  
5 portion of a file system associated file ready for being accessed by an application program  
6 while the contents of said file is being transferred between said server and said client, and
- 7 computer readable program code means for fulfilling application program-initiated requests  
8 for accessing specified portions of said file while said file is being transferred.
- 1 22. The computer program product according to claim 21 further comprising,  
2 computer readable program code means for communicating with said file system by a  
3 Future File System Extension program, via a protocol directed to file accesses to said file  
4 system.
- 1 23. The computer program product according to claim 22 in which said protocol is XDSE or  
2 derivable from XDSE, or functionally equivalent to XDSE.
- 1 24. The computer program product according to claim 22 in which said Future File System  
2 Extension program is implemented as a stacked file system.
- 1 25. The computer program product according to claim 22 in which said Future File System  
2 Extension program is implemented in the file system itself.
- 1 26. The computer program product according to claim 21 further comprising,  
2 computer readable program code means for rendering data on the client computer system.

- 1 27. The computer program product according to claim 21 further comprising,  
2 computer readable program code means for directly transferring data between a server and  
3 an end-user client.
- 1 28. The computer program product according to claim 27 further comprising,  
2 computer readable program code means for transferring new media data by streaming the  
3 data from the server.
- 1 29. A computer program product comprising a computer useable medium having computer  
2 readable program code means therein for use with a client-server based file transfer  
3 apparatus comprising:  
4 computer readable program code means for issuing specifications by said client-server, and  
5  
6 computer readable program code means for streaming client-requested file information to a  
7 client computer system in portions according to the specifications issued by said  
8 client-server.
- 1 30. The computer program product according claim 29 in which said computer readable  
2 program code means for streaming includes computer readable program code means for  
3 sequentially streaming, skipping portions of the requested file previously streamed.